

CLAIMS:

1. A display device comprising:
pixels (18) with electrophoretic particles (8, 9),
a driver (10, 16) for supplying drive pulses to the pixels (18) to bring the
pixels (18) in a predetermined optical state corresponding to image information to be
5 displayed, and
a controller (15) for controlling the driver (10, 16) to successively supply a
drive pulse (V_{ni}) and a correction pulse (dc_{ni}), the drive pulse (V_{ni}) having a voltage level
for bringing the electrophoretic particles (8, 9) into a continuously moving state as long as the
drive pulse (V_{ni}) is present to approximate a desired optical state, the correction pulse (dc_{ni})
10 having a voltage level being too low for bringing the electrophoretic particles (8, 9) into a
continuously moving state but high enough for moving the electrophoretic particles (8, 9)
over a relatively small distance with respect to dimensions of the pixels (18) to reach the
desired optical state.
- 15 2. A display device as claimed in claim 1, wherein the drive pulse has a single
variable voltage.
3. A display device as claimed in claim 1, wherein the drive pulse has a variable
duration.
- 20 4. A display device as claimed in claim 1, wherein the drive pulse is dependent
upon at least one previous image.
5. A display device as claimed in claim 1, wherein, the voltage levels of the
25 correction pulses (dc_{in}) for the corresponding desired optical states, are stored in a memory
(14).
6. A display device as claimed in claim 1, further comprising an optical sensitive
element (30) for measuring a light output of a pixel (18); a comparator (31) for comparing the

measured light output (ML) with a desired light output (DL) to obtain a comparison signal (CO), the controller (15) being adapted for receiving the comparison signal (CO) to adapt the voltage level of the correction pulse (dcin) to obtain the desired light output.

- 5 7. A display device as claimed in claim 1, wherein the controller (15) further comprises a calculation unit (150) for determining a duration, or a voltage level, or both a duration and a voltage level of the drive pulse (Vni) with a transition based driving scheme.
8. A display device as claimed in claim 1, wherein the controller (15) and the
10 driver (10, 16) are adapted for supplying the drive pulse (Vni) having several levels (Vn11, Vn12, Vn13).
9. A display device as claimed in claim 1, wherein the display device further comprises a controller (15) being adapted for supplying a preset signal (53, 71. 72; 97)
15 preceding the drive pulse (Vni), the preset signal (53, 71. 72; 97) comprising a preset pulse having an energy sufficient to release the electrophoretic particles (8, 9) at a first position near one of the two electrodes (5, 6) corresponding to a first optical state, but too low to enable the particles (8, 9) to reach a second position near the other electrode (5, 6) corresponding to a second optical state.
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10. A display device as claimed in claim 1, wherein the voltage magnitude of the correction pulse (dcin) is selected between 0.5 and 3 Volts.
11. A display apparatus comprising a display device as claimed in claim 1.